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PATENT AND TRADEMARK OFFICE

APPLICANTS: Peter E. Hart *et al.*
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Dated: December 8, 2008

By: /Jennifer R. Bush/

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APPEAL BRIEF

Real Party in Interest

The subject application is owned by Ricoh Co., Ltd., a corporation of Japan.

Related Appeals and Interferences

There are no known related appeals or interferences that may directly affect, be directly affected by, or have a bearing on the Board's decision in the pending appeal.

Status of Claims

Claims 1-118 are pending and stand rejected. The claims on appeal are claims 1-118, which are set forth in the Claims Appendix.

Status of Amendments

Appellant has not amended the claims since the final rejection.

Summary of the Claimed Subject Matter

The claimed invention comprises systems and methods for printing time-based media data. An apparatus for the printing the time-based media uses a user interface (110; FIG. 9) for receiving user input specifying a multimedia function to perform on the time-based media and specifying a distribution of processing power. A printer (115, 702) performs a first amount of processing satisfying the user-specified distribution of processing power and outputs an instruction to perform a second amount of processing. A processing device (702-716) receives the instruction from the printer and performs the second amount of processing. Both a printed output (160) and an electronic output (170) may be produced.

More specifically, claim 1 recites a system for printing time-based media data (§ [0009]), the system comprising:

a user interface for receiving user input (§ [0007], [0025]; FIGS. 1, 3-5, 8), the user input specifying a multimedia function to perform on the time-based media and specifying a distribution of processing power (§ [0008], [0066]; FIG. 9) for carrying out the specified multimedia function (FIG. 7), wherein carrying out the specified

multimedia function includes selecting a range of the time-based media (¶¶ [0026].[0027], [0042]);

a printer (FIG. 1, 8), communicatively coupled to the user interface, the printer adapted to perform a first amount of processing satisfying the distribution of processing power indicated by the received user input, and to output an instruction to perform a second amount of processing satisfying the distribution of processing power indicated by the received user input (¶¶ [0006], [0008], [0020]-[0022]); and

a processing device (FIG. 1, 8) adapted to receive the instruction from the printer and perform the second amount of processing in response to the instruction from the printer (¶¶ [0021], [0066], [0067]).

Claim 81 recites a method for printing time-based media (FIG. 2), the method comprising:

receiving time-based media data from a media source (¶ [0023]; FIGS. 2, 3);

receiving user input (¶ [0023], [0025]; FIGS. 2-5, 7), the user input specifying a multimedia function to perform on the time-based media and specifying a distribution of processing power between a printer and a processing device (¶¶ [0008], [0066]; FIG. 9) to carry out the specified multimedia function (¶ [0023]; FIGS. 2, 7), wherein carrying out the specified multimedia function includes selecting a range of the time-based media (¶¶ [0026].[0027], [0042]);

determining a first portion of the processing to be allocated to the printer and a second portion of the processing to be allocated to the processing device satisfying the distribution of processing power specified by the user input (¶¶ [0008], [0045]-[0047]);

allocating the determined processing portions to the printer and the processing device (¶ [0064]; FIGS. 1, 8) based on the distribution of processing power specified by the

user input;

performing, by the printer, the allocated first portion of processing to carry out the specified multimedia function (§ [0023]; FIGS. 1, 2, 8);

performing, by the processing device, the allocated second portion of processing to carry out the specified multimedia function (§ [0023]; FIGS. 1, 2, 8);

producing a printed output (§ [0019]; FIG. 1, 8) comprising a first representation the processed time-based media data; and

producing an electronic output (§ [0019]; FIG. 1, 8) comprising a second representation of the processed time-based media data.

Grounds of Rejection to be Reviewed on Appeal

The grounds of rejection presented for review in the present appeal are as follows:

1. Whether Katsuo et al. (US Patent 5,721,883) in view of Sugiyama et al. (US Patent 5,633,723) and Poon (“Performance Analysis of Median Filtering on Meiko™ – A Distributed Multiprocessor System”) render obvious claims 1-6, 20-21, 40, 45, and 55 under 35 U.S.C. § 103(a).
2. Whether Katsuo et al. in view of Sugiyama, Poon, and Chino et al. (US Patent 6,118,888) render obvious claims 7-9, 12-13, 23-28, 47-48, 67, and 79 under 35 U.S.C. § 103(a).
3. Whether Katsuo et al. in view of Sugiyama, Poon, and Kametani et al. (US Patent 5,091,948) render obvious claims 10 and 11 under 35 U.S.C. § 103(a).
4. Whether Katsuo et al. in view of Sugiyama, Poon, and Halverson et al. (US Patent Publication No. 2002/0101513 A1) render obvious claims 14 and 15 under 35 U.S.C. § 103(a).

5. Whether Katsuo et al. in view of Sugiyama, Poon, Halverson, and Chino render obvious claims 16 and 19 under 35 U.S.C. § 103(a).
6. Whether Katsuo et al. in view of Sugiyama, Poon, Halverson, Chino, and Kametani render obvious claims 17 and 18 under 35 U.S.C. § 103(a).
7. Whether Katsuo et al. in view of Sugiyama, Poon, Chino, and Krumm (US Patent 6,611,622 B1) render obvious claims 22, 30, and 31 under 35 U.S.C. § 103(a).
8. Whether Katsuo et al. in view of Sugiyama, Poon, and Kim et al. (US Patent 6,594,377) render obvious claim 29/1 under 35 U.S.C. § 103(a).
9. Whether Katsuo et al. in view of Sugiyama, Poon, Chino, and Kim render obvious claim 29/28 under 35 U.S.C. § 103(a).
10. Whether Katsuo et al. in view of Sugiyama, Poon, and Chino, and Krumm render obvious claims 32-36 under 35 U.S.C. § 103(a).
11. Whether Katsuo et al. in view of Sugiyama, Poon, and Gerber (US Patent 5,568,406) render obvious claims 37 and 39 under 35 U.S.C. § 103(a).
12. Whether Katsuo et al. in view of Sugiyama, Poon, Gerber, and Chino render obvious claim 38 under 35 U.S.C. § 103(a).
13. Whether Katsuo et al. in view of Sugiyama, Poon, and Hymel (US Patent Publication 2003/0220988) render obvious claims 41-44, 49-50, 56-63, 68, 70, 78, and 80 under 35 U.S.C. § 103(a).
14. Whether Katsuo et al. in view of Sugiyama, Poon, and Stevens (US Patent Publication 2002/0010641 A1) render obvious claims 46, 54, 64-66, and 74 under 35 U.S.C. § 103(a).
15. Whether Katsuo et al. in view of Sugiyama, Poon, Stevens, and McCarthy (US

- Patent 6,296,693) render obvious claims 51, 69, 71-73 under 35 U.S.C. § 103(a).
16. Whether Katsuo et al. in view of Sugiyama, Poon, and Wedekind (US Patent 5,115,967) render obvious claim 53 under 35 U.S.C. § 103(a).
 17. Whether Katsuo et al. in view of Sugiyama, Poon, and Rowe (US Patent Publication 2001/0003846 A1) render obvious claim 75 under 35 U.S.C. § 103(a).
 18. Whether Katsuo et al. in view of Sugiyama, Poon, and Abgrall (US Patent 6,373,498) render obvious claim 77 under 35 U.S.C. § 103(a).
 19. Whether Katsuo et al. in view of Sugiyama render obvious claims 81-84, 98-99, and 118 under 35 U.S.C. § 103(a).
 20. Whether Katsuo et al. in view of Sugiyama, and Chino render obvious claims 85-87, 90-91, and 101-106 under 35 U.S.C. § 103(a).
 21. Whether Katsuo et al. in view of Sugiyama, and Kametani render obvious claims 88 and 89 under 35 U.S.C. § 103(a).
 22. Whether Katsuo et al. in view of Sugiyama, and Halverson render obvious claims 92 and 93 under 35 U.S.C. § 103(a).
 23. Whether Katsuo et al. in view of Sugiyama, Halverson, and Chino render obvious claims 94 and 97 under 35 U.S.C. § 103(a).
 24. Whether Katsuo et al. in view of Sugiyama, Halverson, Chino, and Kametani render obvious claims 95 and 96 under 35 U.S.C. § 103(a).
 25. Whether Katsuo et al. in view of Sugiyama, and Krumm render obvious claims 100, 108, and 109 under 35 U.S.C. § 103(a).
 26. Whether Katsuo et al. in view of Sugiyama, and Kim render obvious claim 107/81 under 35 U.S.C. § 103(a).

27. Whether Katsuo et al. in view of Sugiyama, Chino, and Kim render obvious claim 107/106 under 35 U.S.C. § 103(a).
28. Whether Katsuo et al. in view of Sugiyama, Chino, and Krumm render obvious claims 110-114 under 35 U.S.C. § 103(a).
29. Whether Katsuo et al. in view of Sugiyama, Poon, and Gerber render obvious claims 115 and 117 under 35 U.S.C. § 103(a).
30. Whether Katsuo et al. in view of Sugiyama, Gerber, and Chino render obvious claim 116 under 35 U.S.C. § 103(a).

Argument

I. Rejection of Claims 1-80

Representative claim 1 recites:

- A system for printing time-based media data, the system comprising:
 - a user interface for receiving user input, the user input specifying a multimedia function to perform on the time-based media and specifying a distribution of processing power for carrying out the specified multimedia function, wherein carrying out the specified multimedia function includes selecting a range of the time-based media;
 - a printer, communicatively coupled to the user interface, the printer adapted to perform a first amount of processing satisfying the distribution of processing power indicated by the received user input, and to output an instruction to perform a second amount of processing satisfying the distribution of processing power indicated by the received user input; and
 - a processing device adapted to receive the instruction from the printer and perform the second amount of processing in response to the instruction from the printer.

The claim recites “a user interface” for receiving “user input specifying... a distribution of processing power for carrying out the specified multimedia function.” In other words, the

user interface is a means for allowing the system to receive user-specified processing distribution instructions.

These aspects of the claimed invention are not disclosed or suggested by Katsuo, Sugiyama, and Poon, alone or in the combination suggested by the Examiner. The Examiner admits that Katsuo does not disclose or suggest receiving user input, alleging it merely shows “input.” *See* Final Office Action, p. 3, ll. 21-22. However, the Examiner argues that Katsuo does teach *input specifying a distribution of processing power*. Katsuo merely describes a processor that analyzes *a file specifying a number of identical arithmetic processors*. *See* Katsuo, col. 6, ll. 40-49. Assuming Katsuo’s file is “input” (but notably, not **user input**), it still does not specify **a distribution of processing power**, merely a number of processors. Instead, the processor follows *a predefined algorithm* to allocate processing between the number of identical arithmetic processors. *See* Katsuo, col. 4, ll. 5-16; col. 4, ll. 43-59. Thus, Katsuo cannot disclose or suggest receiving even “**input**” that specifies a distribution of processing power, much less “user input” that does.

Poon does not remedy the above-stated deficiencies of Katsuo, nor does the Examiner argue that it does. Like Katsuo, Poon’s master **processor** divides processing evenly among identical slave processors *according to a set formula* that allocates an *even share of the processing to each* slave processor based *solely on image height, image width, and the number of identical slave processors*. *See* Poon, page 635, left column. Thus, Poon likewise fails to disclose or suggest any **input** specifying a distribution of processing power, much less “user input” specifying such distribution.

Sugiyama also does not remedy the deficiencies of Katsuo and Poon. Sugiyama merely discloses a video printer including mode-setting, conditioning, and other “keys” (FIG. 1, numerals 21-25; col. 3, l.57-col. 4, l. 8) that the Examiner relies upon to show “a user interface” for “user selections of processing parameters” generally. Final Office Action at p. 4. However, Sugiyama makes no mention of distributing processing between multiple processors. Thus, Sugiyama also does not disclose “a user interface” for receiving “user input specifying... a distribution of processing power for carrying out the specified multimedia function.”

With respect to the combination of references, the test is what the references **as a whole** would have suggested to one of ordinary skill in the art. MPEP 2143.01. The Examiner’s piecemeal treatment doesn’t do it: Katsuo and Poon show parallel processing with no user-specified input, and Sugiyama shows user input that has nothing to do with specifying a distribution of processing. Thus, even the Examiner cannot find a reference that shows user-specified distribution of processing power.

In the Advisory Action dated September 19, 2008, the Examiner provides references to support an argument that user interfaces are known in the art. Applicants do not contest that user interfaces are known in the art as interfaces between a user and *user-controlled functions*. However, **user input specifying distribution of processing** between multiple processors, i.e., that the distribution is under the user’s control, is not. Thus, providing references that show that user interfaces can be used for various user-controlled functions is irrelevant. The Examiner has provided no reference to show “user input specifying a distribution of processing power” between processors.

Indeed, Katsuo and Poon **teach away** from a user-specified processing distribution. As the Examiner admits, **both** “Katsuo and Poon [] prefer the use of an automated determination of

the distribution of processing power.” Advisory Action at p. 4 (top). For example, Katsuo says that an *automated* determination of processing allocation beneficially reduces time, difficulty, and cost of program development. *See* Katsuo, col. 13, ll. 35-54. Poon also advocates an *automated* determination of processing parallelization, stressing the importance of a “good optimizing parallel compiler” and describing proper parallelization as “an uphill task for [a] parallel language programmer.” *See* Poon, para. spanning p. 638-639.

The Examiner argues regarding the above statements regarding the automated determination of processing of Katsuo and Poon: “this in no way *prevents modification* of the systems presented therein.” *Id.* (emphasis added). Thus, the Examiner also admits that a user-specification of processing power would be a modification from the “automated determination” preference of Katsuo and Poon. Applicants know of no standard by which it must be shown that aspects of references teaching away from a suggested modification must “prevent” such modification. Rather, as articulated above, the standard is what the references **as a whole** would have suggested to one of ordinary skill in the art. MPEP 2143.01. Applicants submit that Katsuo’s and Poon’s “preferences,” which the Examiner admits are present, would suggest to one of skill in the art that user-distribution of processing power would *not* be advisable, and thus not obvious in view of those teachings.

For these reasons, the suggested modification for the combination of references would take the cited aspects of Katsuo, Sugiyama, and/or Poon well beyond their “established functions,” thereby precluding the “predictability” of such combining under *KSR*. Thus, the claimed invention is “more than a predictable use of [these] prior art elements according to their established functions.” *See KSR v. Teleflex*, 550 U.S. 398 (2007).

For at least the above-stated reasons, claim 1 is patentable over Katsuo, Sugiyama, and Poon, alone or in the suggested combinations.

Claims 2-80 depend from claim 1, incorporate the elements of claim 1, and recite additional patentably distinguishable limitations. Claims 2-80 therefore also are patentably distinguishable over Katsuo, Sugiyama, and Poon, alone or in the suggested combination.

Claims 7-19, 22-39, 41-44, 46-54, and 56-80 stand rejected under U.S.C. 103(a) as allegedly being unpatentable over Katsuo and Sugiyama in various combinations with Poon, Chino, Kametani, Halverson, Krumm, Kim, Gerber, Hymel, Stevens, McCarthy, Wedekind, Rowe, and/or Abgrall. These additional cited references do not disclose or suggest the limitations absent from Katsuo, Sugiyama, and Poon discussed above, nor does the Examiner assert that they do. Therefore, claims 7-19, 22-39, 41-44, 46-54, and 56-80 also are patentable over all of the references cited above, alone or in the suggested combinations.

II. Rejection of Claims 81-118

Representative claim 81 recites:

A method for printing time-based media, the method comprising:
receiving time-based media data from a media source;
receiving user input, the user input specifying a multimedia function to perform on the time-based media and specifying a distribution of processing power between a printer and a processing device to carry out the specified multimedia function, wherein carrying out the specified multimedia function includes selecting a range of the time-based media;
determining a first portion of the processing to be allocated to the printer and a second portion of the processing to be allocated to the processing device satisfying the distribution of processing power specified by the user input;
allocating the determined processing portions to the printer and the processing device based on the distribution of processing power specified by the user input;

performing, by the printer, the allocated first portion of processing to carry out the specified multimedia function;
performing, by the processing device, the allocated second portion of processing to carry out the specified multimedia function;
producing a printed output comprising a first representation the processed time-based media data; and
producing an electronic output comprising a second representation of the processed time-based media data.

The claim recites “receiving user input...specifying distribution of processing power...to carry out the specified multimedia function.” In other words, a user-specifies the processing distribution.

These aspects of the claimed invention are not disclosed or suggested by Katsuo, Sugiyama, and Poon, alone or in the combination suggested by the Examiner, for the reasons articulated above with respect to claim 1. Therefore claim 81 is patentable over Katsuo and Sugiyama for at least the same reasons provided above in reference to independent claim 1.

Claims 82-118 depend on claim 81, incorporate the elements of claim 1, and recite additional patentably distinguishable limitations. Claims 82-118 therefore also are patentably distinguishable over Katsuo and Sugiyama, alone or in the suggested combination.

Claims 82-84, 88, 89, 92-100, and 107-118 stand rejected under U.S.C. 103(a) as allegedly being unpatentable over Katsuo and Sugiyama in various combinations with Poon, Chino, Kametani, Halverson, Krumm, Kim, and/or Gerber. These additional cited references do not disclose or suggest the limitations absent from Katsuo and Sugiyama discussed above, nor does the Examiner assert that they do. Therefore, claims 82-84, 88, 89, 92-100, and 107-118 also are patentable over all of the references cited above, alone or in the suggested combinations.

Based on the foregoing, Appellant respectfully submits that each of the pending rejections suffers from a clear deficiency in the *prima facie* case asserted in support of the rejection. Accordingly, Appellant requests that the rejections of claims 1-118 be withdrawn.

Respectfully submitted,

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Claims Appendix

1. A system for printing time-based media data, the system comprising:
 - a user interface for receiving user input, the user input specifying a multimedia function to perform on the time-based media and specifying a distribution of processing power for carrying out the specified multimedia function, wherein carrying out the specified multimedia function includes selecting a range of the time-based media;
 - a printer, communicatively coupled to the user interface, the printer adapted to perform a first amount of processing satisfying the distribution of processing power indicated by the received user input, and to output an instruction to perform a second amount of processing satisfying the distribution of processing power indicated by the received user input; and
 - a processing device adapted to receive the instruction from the printer and perform the second amount of processing in response to the instruction from the printer.

2. The system of claim 1 wherein the processing device includes the user interface.
3. The system of claim 1 wherein the printer includes the user interface.
4. The system of claim 1 wherein the user interface is on a device separate from the processing device and the printer.
5. The system of claim 2, 3 or 4 wherein the user interface displays status information about the performance of the multimedia function.
6. The system of claim 1 wherein the processing device is a personal computer.
7. The system of claim 1 wherein the multimedia function includes selecting a range of audio data in response to received input from the user.
8. The system of claim 1 wherein the multimedia function includes applying audio event detection to the time-based media data.
9. The system of claim 8 wherein the multimedia function further includes determining a confidence level associated with the audio event detection.
10. The system of claim 1 wherein the multimedia function includes applying a speaker segmentation function to the time-based media data.
11. The system of claim 1 or 10 wherein the multimedia function includes applying a speaker recognition function to the time-based media data.
12. The system of claim 1 wherein the multimedia function includes applying a sound source localization function to the time-based media data.

13. The system of claim 12 wherein the multimedia function further includes applying audio event detection to the time-based media data.

14. The system of claim 1 wherein the multimedia function includes applying a speech recognition function to the time-based media data.

15. The system of claim 14 wherein the multimedia function includes applying a profile analysis function to the time-based media data.

16. The system of claim 14 wherein the multimedia function includes applying an audio event detection function to the time-based media data.

17. The system of claim 16 wherein the multimedia function further includes applying a speaker recognition function to the time-based media data.

18. The system of claim 16 wherein the multimedia function further includes applying a speaker segmentation function to the time-based media data.

19. The system of claim 16 wherein the multimedia function further includes applying a sound localization function to the time-based media data.

20. The system of claim 1 wherein the multimedia function includes selecting a range of video data in response to received input from the user.

21. The system of claim 1 wherein the multimedia function includes applying a video event detection function to the time-based media data.

22. The system of claim 1 wherein the multimedia function includes applying a color histogram analysis function to the time-based media data.

23. The system of claim 1 wherein the multimedia function includes applying a face detection function to the time-based media data.

24. The system of claim 23 wherein the multimedia function includes applying a clustering function to the time-based media data to merge multiple instances of a face into a representative face image.

25. The system of claim 1 wherein the multimedia function includes applying a face recognition function to the time-based media data.

26. The system of claim 1 wherein the multimedia function includes applying an optical character recognition function to the time-based media data.

27. The system of claim 26 wherein the multimedia function further includes applying a clustering function to the time-based media data to merge similar results of the optical character recognition.

28. The system of claim 1 wherein the multimedia function includes applying a motion analysis function to the time-based media data.

29. The system of claim 1 or claim 28 wherein the multimedia function includes applying a distance estimation function to the time-based media data.

30. The system of claim 1 wherein the multimedia function includes applying foreground/background segmentation function to the time-based media data.

31. The system of claim 1 wherein the multimedia function includes applying a scene segmentation function to the time-based media data.

32. The system of claim 31 wherein the multimedia function further includes applying a face recognition function to the time-based media data.

33. The system of claim 31 wherein the multimedia function further includes applying a face detection function to the time-based media data.

34. The system of claim 31 wherein the multimedia function includes applying an optical character recognition function to the time-based media data.

35. The system of claim 34 wherein the multimedia function further includes applying a face recognition function to the time-based media data.

36. The system of claim 34 wherein the multimedia function includes applying a face detection function to the time-based media data.

37. The system of claim 1 wherein the multimedia function includes applying an automobile recognition function to the time-based media data.

38. The system of claim 37 wherein the multimedia function further includes applying a motion analysis function to the time-based media data.

39. The system of claim 1 wherein the multimedia function includes applying a license plate recognition function to the time-based media data.

40. The system of claim 1 wherein the multimedia function includes applying a visual inspection function to the time-based media data.

41. The system of claim 1 wherein the user interface is configured to allow a user to control a compact disc (CD) device.

42. The system of claim 1 wherein the user interface is configured to allow a user to control a digital video disc (DVD) device.

43. The system of claim 1 wherein the user interface is configured to allow a user to control an audio tape device.

44. The system of claim 1 wherein the user interface is configured to allow a user to control a video tape device.

45. The system of claim 1 wherein the user interface is configured to allow a user to control a multimedia server.

46. The system of claim 1 wherein the user interface is configured to allow a user to control encryption hardware.

47. The system of claim 1 wherein the user interface is configured to allow a user to control audio sound localization hardware.

48. The system of claim 1 wherein the user interface is configured to allow a user to control motion detection hardware.

49. The system of claim 1 wherein the user interface is configured to allow a user to control a MIDI player.

50. The system of claim 1 wherein the user interface is configured to allow a user to control a cellular telephone.

51. The system of claim 1 wherein the user interface is configured to allow a user to control a two-way radio.

52. The system of claim 1 wherein the user interface is configured to allow a user to control a world wide web display.

53. The system of claim 1 wherein the user interface is configured to allow a user to control a climate sensor.

54. The system of claim 1 wherein the user interface is configured to allow a user to control a radio receiver.

55. The system of claim 1 wherein the processor is further configured to display results of the multimedia function on the display of the user interface.

56. The system of claim 1 wherein the processing device is a DVD drive.

57. The system of claim 1 wherein the processing device is a CD drive.

58. The system of claim 1 wherein the processing device is an audio tape drive.

59. The system of claim 1 wherein the processing device is a video cassette device.

60. The system of claim 1 wherein the processing device is a removable media device.

61. The system of claim 1 wherein the processing device is an embedded audio recorder.

62. The system of claim 1 wherein the processing device is an embedded video recorder.

63. The system of claim 1 wherein the processing device is an non-volatile storage device.
64. The system of claim 1 wherein the processing device is an embedded multimedia server.
65. The system of claim 1 wherein the processing device is audio encryption hardware.
66. The system of claim 1 wherein the processing device is video encryption hardware.
67. The system of claim 1 wherein the processing device is audio sound localization hardware.
68. The system of claim 1 wherein the processing device is a cellular telephone.
69. The system of claim 1 wherein the processing device is a two-way radio.
70. The system of claim 1 wherein the processing device is a world-wide web display.
71. The system of claim 1 wherein the processing device is a radio receiver for receiving AM signals.
72. The system of claim 1 wherein the processing device is a radio receiver for receiving FM signals.
73. The system of claim 1 wherein the processing device is a radio receiver for receiving short wave signals.
74. The system of claim 1 wherein the processing device is a satellite radio receiver.

75. The system of claim 1 wherein the processing device is a weather alert receiver.
76. The system of claim 1 wherein the processing device is an emergency alert monitor for receiving emergency broadcast system alerts.
77. The system of claim 1 wherein the processing device is hardware for performing VGA screen captures.
78. The system of claim 1 wherein the processing device is hardware for performing audio capture.
79. The system of claim 1 wherein the processing device is hardware for capturing data from an electronic pen.
80. The system of claim 1 wherein the processing device is a disposable media writer.
81. A method for printing time-based media, the method comprising:
receiving time-based media data from a media source;
receiving user input, the user input specifying a multimedia function to perform on the time-based media and specifying a distribution of processing power between a printer and a processing device to carry out the specified multimedia function, wherein carrying out the specified multimedia function includes selecting a range of the time-based media;
determining a first portion of the processing to be allocated to the printer and a second portion of the processing to be allocated to the processing device satisfying the distribution of processing power specified by the user input;
allocating the determined processing portions to the printer and the processing device based on the distribution of processing power specified by the user input;

performing, by the printer, the allocated first portion of processing to carry out the specified multimedia function;

performing, by the processing device, the allocated second portion of processing to carry out the specified multimedia function;

producing a printed output comprising a first representation the processed time-based media data; and

producing an electronic output comprising a second representation of the processed time-based media data.

82. The method of claim 81 wherein the user input is received at the printer.
83. The method of claim 81 wherein the user input is received at the processing device.
84. The method of claim 81 wherein the processing device is a personal computer.
85. The method of claim 81 wherein the multimedia function includes selecting a range of audio data in response to received input from the user.
86. The method of claim 81 wherein the multimedia function includes applying audio event detection to the time-based media data.
87. The method of claim 86 wherein the multimedia function further includes determining a confidence level associated with the audio event detection.
88. The method of claim 81 wherein the multimedia function includes applying a speaker segmentation function to the time-based media data.
89. The method of claim 81 or 88 wherein the multimedia function includes applying a speaker recognition function to the time-based media data.
90. The method of claim 81 wherein the multimedia function includes applying a sound source localization function to the time-based media data.
91. The method of claim 90 wherein the multimedia function further includes applying audio event detection to the time-based media data.
92. The method of claim 81 wherein the multimedia function includes applying a speech recognition function to the time-based media data.

93. The method of claim 92 wherein the multimedia function includes applying a profile analysis function to the time-based media data.

94. The method of claim 92 wherein the multimedia function includes applying an audio event detection function to the time-based media data.

95. The method of claim 94 wherein the multimedia function further includes applying a speaker recognition function to the time-based media data.

96. The method of claim 94 wherein the multimedia function further includes applying a speaker segmentation function to the time-based media data.

97. The method of claim 94 wherein the multimedia function further includes applying a sound localization function to the time-based media data.

98. The method of claim 81 wherein the multimedia function includes selecting a range of video data in response to received input from the user.

99. The method of claim 81 wherein the multimedia function includes applying a video event detection function to the time-based media data.

100. The method of claim 81 wherein the multimedia function includes applying a color histogram analysis function to the time-based media data.

101. The method of claim 81 wherein the multimedia function includes applying a face detection function to the time-based media data.

102. The method of claim 101 wherein the multimedia function includes applying a clustering function to the time-based media data to merge multiple instances of a face into a representative face image.

103. The method of claim 81 wherein the multimedia function includes applying a face recognition function to the time-based media data.

104. The method of claim 81 wherein the multimedia function includes applying an optical character recognition function to the time-based media data.

105. The method of claim 104 wherein the multimedia function further includes applying a clustering function to the time-based media data to merge similar results of the optical character recognition.

106. The method of claim 81 wherein the multimedia function includes applying a motion analysis function to the time-based media data.

107. The method of claim 81 or claim 106 wherein the multimedia function includes applying a distance estimation function to the time-based media data.

108. The method of claim 81 wherein the multimedia function includes applying foreground/background segmentation function to the time-based media data.

109. The method of claim 81 wherein the multimedia function includes applying a scene segmentation function to the time-based media data.

110. The method of claim 109 wherein the multimedia function further includes applying a face recognition function to the time-based media data.

111. The method of claim 109 wherein the multimedia function further includes applying a face detection function to the time-based media data.

112. The method of claim 109 wherein the multimedia function includes applying an optical character recognition function to the time-based media data.

113. The method of claim 112 wherein the multimedia function further includes applying a face recognition function to the time-based media data.

114. The method of claim 112 wherein the multimedia function includes applying a face detection function to the time-based media data.

115. The method of claim 81 wherein the multimedia function includes applying an automobile recognition function to the time-based media data.

116. The method of claim 115 wherein the multimedia function further includes applying a motion analysis function to the time-based media data.

117. The method of claim 81 wherein the multimedia function includes applying a license plate recognition function to the time-based media data.

118. The method of claim 81 wherein the multimedia function includes applying a visual inspection function to the time-based media data.

Evidence Appendix

None

Related Proceedings Appendix

None